



Case report

Three decade old cold case murder solved with evidence from a sexual assault kit

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ABSTRACT

Sexual assault occurs at alarming rates in America. The true incidence remains unknown as many victims fail to both report for immediate medical care and notify law enforcement of the crime committed. For those who do seek medical assistance, a Sexual Assault Kit is available in Emergency Departments with established protocols for the forwarding of collected specimens to law enforcement. A crime lab analyzes the evidence to identify the offender's DNA. A DNA profile is then created and archived into a database. This case involved a woman who not only endured a sexual assault, but also sustained multiple gun shot wounds, and witnessed the murder of her friend nearly three decades ago. At that time, she was treated for her injuries and evidence was collected and secured into a Sexual Assault Kit. A DNA profile was then created from a predetermined crime lab. In 2011, a Cold Case Investigator, who was reviewing all archived DNA profiles of currently incarcerated individuals in the city where the initial crime was committed, was able to match a current prisoner's DNA to that of the DNA profile created from specimens collected during the sexual assault exam nearly thirty years ago. The perpetrator subsequently was charged with murder by the criminal justice system and received a thirty year sentence without opportunity for parole.

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1. Introduction

Violence against women first came to be viewed as a serious social problem in the early 1970s, in part because of the re-emergence of the Women's Movement.¹ Rape or sexual assault is defined as an event that occurs without the victim's consent, that involved the use of force to penetrate the victim's vagina or anus by penis, tongue, fingers or object.² It is estimated that every 2 min, someone in the US is sexually assaulted.³ Nearly 97% of rapists never spend a day in jail since most sexual assaults are not reported to police.³ Rapes/sexual assaults committed by strangers are more likely to be reported to law enforcement than rapes/sexual assaults committed by intimate partners, other relatives and friends.⁴ Sexual assaults can leave an indelible scar on its victims. Moreover, the individual assaulted must not only endure the attack, but must also relive the moments of torture through subsequent history taking while subjecting themselves to an extensive collection of specimens from various parts of their bodies. They then are asked to consent to multiple laboratory tests including a pregnancy test prior to receiving treatments protecting them for various diseases that the rapist may have transmitted to them. After these

proceedings, the victim who has surrendered her clothing as evidence is subsequently interrogated by law enforcement. Finally, she is offered counseling by agencies such as "Rape Crisis" leading to hospital discharge with recommended follow-up. The collected specimens in the possession of law enforcement are forwarded to a predetermined crime lab for analysis.

2. Case report

Nearly thirty years ago, a 37 year old woman with no living children was examined in a major American city's Emergency Department after being brought there by the city's rescue squad stating that she had been sexually assaulted. The woman had visibly sustained multiple gun shot wounds and was found in an isolated area of the city having been left for dead. She believed she was at that location for over 24 h. In addition, prior to being sexually assaulted she witnessed her friend being shot in the head leading to her instantaneous death by the same criminal.

Before the patient was able to consent to a sexual assault workup, her gun shot wounds were extensive enough to require a chest tube placement. A detailed history of the event was obtained revealing that the unknown assailant forced his way into the vehicle of the victim and her friend and directed them to a location where she was subsequently found. The patient permitted an extensive physical exam documenting the physical signs of force

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and injury. She also consented to a collection of multiple specimens which were secured in a sexual assault kit known at the time as a “Rape Kit”. This kit was appropriately passed on to a predetermined chain of command, ultimately secured by law enforcement. The evidence was then forwarded to an established crime lab for the purpose of creating a DNA profile of the assailant, which was subsequently archived. Additional laboratory testing was performed to document an existing pregnancy, presence of semen, including sperm other diseases such as HIV, syphilis, and hepatitis, along with multiple cultures was obtained. The patient received the acceptable antibiotic prophylaxis for known sexually transmitted diseases at that time. The counselors, known then as “Rape Crisis”, were called to assist the patient. She was transferred to a Surgery unit and was discharged after her chest tube was removed.

In an effort to potentially link prior unsolved crimes to currently incarcerated individuals, a Cold Case Investigator presently working in the same major American city had all archived DNA profiles compared to that of prisoners in custody. The DNA found in the specimens obtained from the victim matched with an individual currently imprisoned. In this case, a murder that had occurred nearly 30 years ago had finally been solved. The male in question was being held for an unrelated charge and after assembly of the original care providers, results gathered from the technicians at the predetermined crime lab, and the city’s prosecuting office, the individual now 57 years old received a 30 year sentence without opportunity for parole.

3. Discussion

A patient being seen in an Emergency Department should have physical evidence obtained within 72 h of the assault.^{5–7} The clinician’s first priority is to treat any life-threatening injuries.⁸ Key evidence retrieved from the victim includes the assailant’s semen, blood or possibly hair transferred in the course of the attack.^{6–9} Containers for head and pubic hair collected through combing and either pulling or cutting along with fingernail scrapings or clippings, oral and vaginal swabs and smears are commonly obtained.^{6–9} These specimens are sealed and handed off to law enforcement. Crime labs analyze the evidence to create a DNA profile that is stored in a database.⁷ The most common test utilized by these labs analyzes portions of the DNA strand called short tandem repeats (STRs) because these short segments of DNA units repeat back to back.¹⁰ The number of times this pattern repeats varies among individuals.¹⁰ STR’s are useful to forensics because this variation in the number of repeating segments is part of that unique 0.1% of a human’s DNA.¹⁰ The final result of STR DNA is a visual display with many peaks representing the number of repeats from each marker known as an electropherogram and commonly referred to as a DNA profile.¹⁰ In this case, the database search matched the DNA from the incarcerated individual with the DNA profile obtained from the sexually assaulted victim and a murder committed almost 30 years prior had finally been solved.⁷ Laboratory testing for pregnancy, semen and sexually transmitted diseases with current treatments was reviewed.^{11–13} Presently

after-assault prophylactic medications include treatment for gonorrhea, chlamydia, trichomonas, bacterial vaginosis, hepatitis B, syphilis, pregnancy prevention, and HIV post exposure prophylaxis.⁸ Counseling is highly recommended along with medical follow-up.^{6–8,13}

The patient examined and treated in the Emergency Department nearly 30 years ago survived a brutal attack. Despite the collaboration of care-providers, crime labs technicians and law enforcement back then, it took nearly three decades to identify this perpetrator. He was permanently removed from society as a result of the criminal justice system in America. Having the proper preparation of collected specimens from this victim led to the assailant’s arrest and conviction. Hopefully this victim will find solace in that this criminal will never harm another individual like herself or her friend again. Her willingness to consent to specimen collection at the time of her assault along with the efforts of the technicians at the crime lab and finally of the vigilance of law enforcement brought this criminal to justice in America.

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Conflict of interest

The author does not declare any conflict of interest.

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